

A new species of *Cosmioconcha* (Gastropoda: Columbellidae) from the northern Gulf of Mexico

Emilio F. GARCÍA
115 Oak Crest Dr,
Lafayette, LA 70503, U. S. A.
Efg2112@louisiana.edu

KEYWORD. Gastropoda, Columbellidae, *Cosmioconcha*, Gulf of Mexico.

ABSTRACT. A new species of *Cosmioconcha*, dredged off the Alabama coast, northern Gulf of Mexico, is described and compared to its congeners. It is the smallest of all western Atlantic species of *Cosmioconcha* heretofore described.

INTRODUCTION

The Biology Department at the University of Louisiana at Lafayette has conducted a series of dredging cruises in the Gulf of Mexico. An important objective of these cruises has been to try to have a better understanding of the biodiversity of the Gulf. This objective has been largely met with the methodical study of the material collected, particularly the micro-mollusks extracted from the sediment. The dredged material has brought to light many molluscan species previously unrecorded for that body of water (see García 1999b, 2000, 2002, 2003, 2007; and García & Lee 2002, 2003), as well as a number of previously un-described species (see García 1999a, 2005, 2006a, 2006b).

In the past year three new species of *Cosmioconcha* from the western Atlantic have been described. Two of these species, *Cosmioconcha rikae* Monsecour & Monsecour, 2006 and *C. geigeri* García, 2006, inhabit the Gulf of Mexico. A third species, *Cosmioconcha nitens* (C. B. Adams, 1850), also inhabits the Gulf. In a cruise conducted during June-July, 2006, two empty, but well-preserved shells of another species of *Cosmioconcha* were obtained with a box dredge off the coast of Alabama; and searching through material collected in earlier cruises uncovered a third specimen dredged in 2004 off the Louisiana coast.

Taking into consideration the new species described herein, a full 50% of the described species of *Cosmioconcha* from the western Atlantic will have been reported from the Gulf of Mexico, and more than 35% will have been described in the very recent past. These facts speak for the success of the work that has been done in the Gulf in recent years, as well as for the potential for many more future discoveries.

All cruises have been conducted on board the R/ V "Pelican", a research vessel owned and operated by LUMCON, the Louisiana Universities Marine Consortium.

Abbreviations

ANSP: The Academy of Natural Sciences, Philadelphia, Pennsylvania, USA.
USNM: National Museum of Natural History, Smithsonian Institution, Washington, DC, USA.
EFG: author's collection
dd: empty shell(s)

SYSTEMATICS

Superfamily **BUCCINOIDEA** Rafinesque, 1815
Family **COLUMBELLIDAE** Swainson., 1840
Subfamily **ATILINAE** Cossman, 1901
Genus *Cosmioconcha* Dall, 1913
Type species: *Buccinum modestum* Powys, 1835, by original designation.

Cosmioconcha nana n. sp.

Figs 1-7

Type material. Holotype ANSP 413705; length 4.6 mm, width 2mm (Figs. 1-6). 1 paratype USNM 2043333 (Fig. 7). 1 paratype EFG 25195.

Type locality. Northern Gulf of Mexico; off Alabama, 29°24.43'N, 87°58.63'W, 74-72 m.

Material examined. **Alabama:** 29°24.43'N, 87°58.63'W, 74-72 m, 2 dd (holotype (Figs. 1-6), 1 paratype (Fig. 7)). **Louisiana:** Sackett Bank, 28°38.16'N89°33.19'W, 60-70 m., 1 dd (paratype 2).

Distribution. North-central Gulf of Mexico, off Alabama and Louisiana, 60-74 m.

Description. Holotype 4.7 mm in length, strong, fusiform (width/ length ratio 0.43 mm) (Figs. 1-6). Protoconch paucispiral, of 1.75 whorls, smooth, white, becoming rust-colored towards end of last whorl (Fig. 4). Transition between protoconch and teleoconch

sharply marked by an abrupt change in color and ornamentation (Fig. 4). Teleoconch of just over 3 whorls; first whorl almost flat-sided; following whorls increasing in convexity. Suture deep, channeled. Axial sculpture of few, sporadically placed, growth scars (Fig. 2); one or two growth scars per whorl; numerous, axially oriented microscopic threads give the shell surface a wrinkled appearance (Fig. 5). Spiral sculpture of incised, punctate spiral grooves; 9 such grooves on first whorl, rapidly increasing in number on later whorls; about 12 strong spiral cords appearing at anterior end of last whorl; cords becoming slightly nodulose when crossed by axial threads. Outer lip strengthened by a moderately strong, wide varix (Fig. 2); ornamentation of last whorl continuing over surface of varix. Aperture elongate-ovate, approximately half the length of the shell; inner outer lip showing 10 weak denticles; columella with a slight swelling at anterior end, followed posteriorly by a sharp, conspicuous denticle (Fig. 6); otherwise smooth. Anterior canal short, wide. Shell color creamy white, with tan, squarish markings that tend to form a checkered pattern at suture and at periphery of last whorl.

Discussion. Paratype 1 is slightly larger than the holotype, measuring 5 mm in length and 2.1 mm in width. It has all of the characters of the holotype, including the rust-colored coloration at the end of the protoconch, as well as the conspicuous denticle near the base of the parietal wall. Paratype 2, the Louisiana specimen, measures 4.2 mm in length but is chipped at the anterior end. It is also slightly more eroded than the Alabama specimens; otherwise, it shows all of the important morphological characters and markings of the other two type specimens.

There are seven columbellid taxa from the western Atlantic that have been assigned to *Cosmioconcha*: *C. nitens* (C. B. Adams, 1850), *C. calliglypta* (Dall & Simpson, 1901), *C. helenae* (Costa, 1983), *C. humfreyi* Jong & Coomans, 1988, *C. dedonderi* Monsecour & Monsecour, 2006, *C. rikaie* Monsecour & Monsecour, 2006, and *C. geigeri* García, 2006. *Cosmioconcha nitens*, *C. rikaie* and *C. geigeri* are known to inhabit the Gulf of Mexico.

Cosmioconcha nitens has a multispiral protoconch, lacks the conspicuous columellar denticle, has a smooth surface except for the spiral cords at the base of the last whorl, and has a proportionately longer aperture; *C. rikaie* is axially ribbed and has a nodulose spiral cord anterior to the suture; and *C. geigeri* has a

white protoconch, stronger axial sculpture, a different spiral sculpture, and a milky-white band at suture. These three species are larger than *Cosmioconcha nana* n. sp.

Cosmioconcha calliglypta, a southern Caribbean species, is stouter, and has stronger sculpture. *Cosmioconcha helenae*, a Brazilian species, has 6 whorls, is axially ribbed, and is nodulose at suture. *Cosmioconcha humfreyi*, a species described from Aruba, is more delicate, with a row of white spots above the suture, and has 9 whorls. *Cosmioconcha dedonderi*, from the southwestern Caribbean, has a different color pattern and a cancellate sculpture. All of these species are also larger in size than *Cosmioconcha nana* n. sp.

In his dissertation on Brazilian columbellids, Costa (2005: 152-156) describes, without naming them, two species from Brazil: *Cosmioconcha* "sp. 1", with axial costae, is similar to *C. rikaie* Monsecour & Monsecour, 2006 in general shape and sculpture. *Cosmioconcha* "sp. 2" is similar in size to the new species; however, it is differently colored, has wider shoulders, has a subsutural spiral sulcus, and different surface ornamentation.

Etymology. From the Latin *nannus* (noun, meaning a dwarf), in reference to the relatively small size of the species when compared to its congeners. It is used here as an adjective, meaning "of small size."

ACKNOWLEDGEMENTS

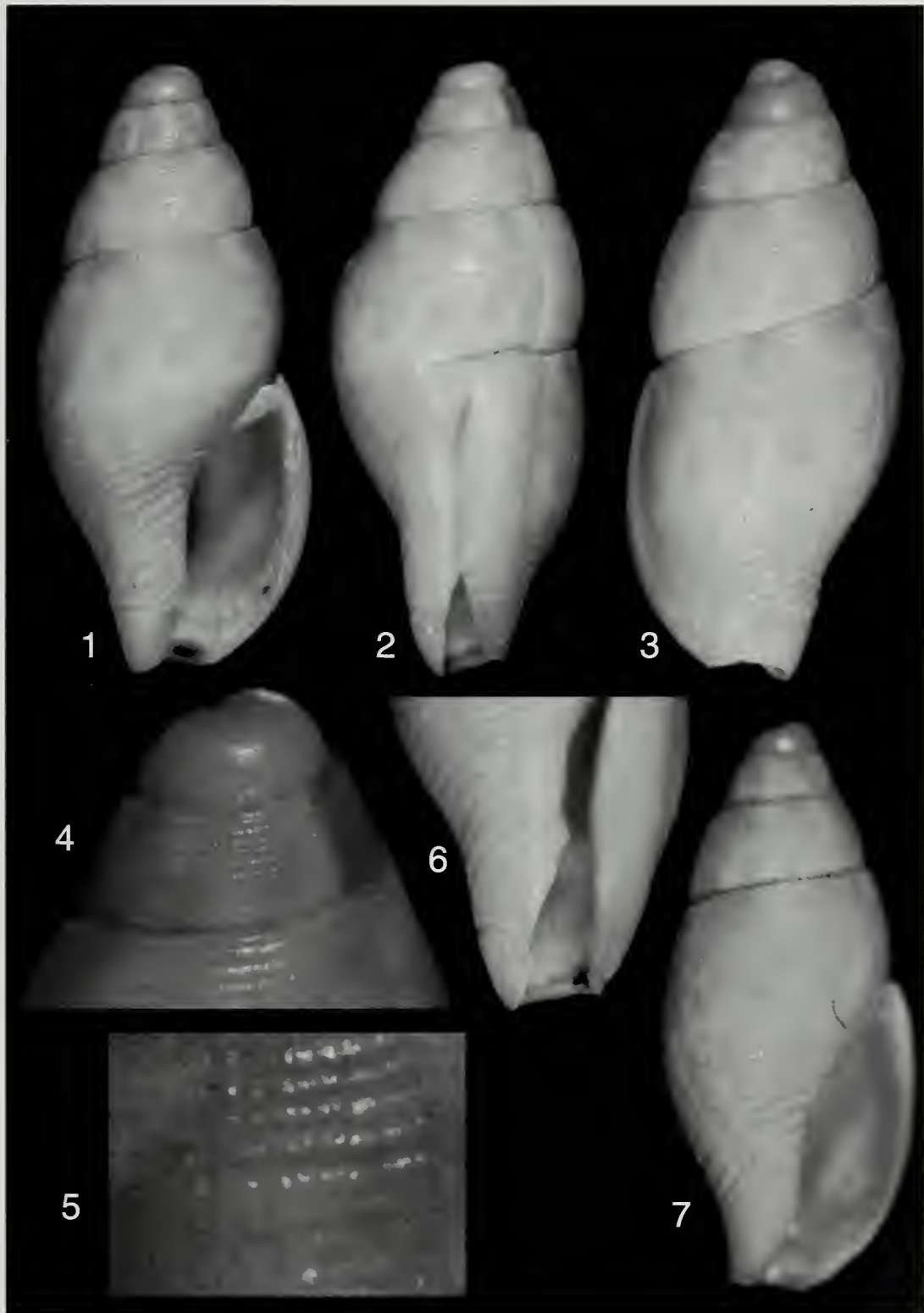
My thanks to Drs. Darryl Felder and Suzanne Fredericq, members of the Biology Department at the University of Louisiana at Lafayette, for inviting me to join them on the 2006 Gulf of Mexico Cruise, and to Kevin Monsecour, whose review of this study has improved its quality. The material for this study is based upon work supported by the National Science Foundation under Grant No. 0315995.

REFERENCES

- Costa, P.M.S. 2005. Estudo taxonômico dos representantes da Família Columbellidae Swainson, 1840 (Mollusca, Caenogastropoda) da costa brasileira. Ph. D. Dissertation, Universidade Federal do Rio de Janeiro/Museu Nacional, Rio de Janeiro, 333 pp.
- García, E. F. 1999a. Three new gastropod species from the New World. *Apex* 14(3-4):59-65.

Figures 1-7

1-7. *Cosmioconcha nana* n. sp., off Alabama, 29°24.43'N, 87°58.63'W, 74-72 m. 1-6. Holotype ANSP 413705; length 4.6 mm, width 2 mm; 7. Paratype IUSNM 2043333, length 5 mm.



- García, E. F. 1999b. New molluscan records for the northwestern Gulf of Mexico. *American Conchologist* 27(2): 27-28.
- García, E. F. 2000. Surprising new molluscan records from Louisiana and the northwestern Gulf of Mexico. *American Conchologist* 28(3): 5-6, 31.
- García, E. F. 2002. More discoveries from a collecting expedition off the Louisiana coast. *American Conchologist* 30(1): 6-7, 10.
- García, E. F. 2003. Unexpected molluscan finds from the hydrocarbon vents off the Louisiana coast. *American Conchologist* 30(4): 28.
- García, E. F. 2005. Six new deep-water molluscan species from the Gulf of Mexico. *Novapex* 6(4): 77-89.
- García, E. F. 2006a. *Conus sauros*, a new *Conus* species (Gastropoda: Conidae) from the Gulf of Mexico. *Novapex* 7(2-3): 71-76.
- García, E. F. 2006b. Six new species of mollusks (Gastropoda: Cerithioidea, Buccinoidea, Muricoidea) from Bahía de Campeche, southwestern Gulf of Mexico. *Novapex* 7(4): 77-89.
- García, E. F. 2007. Results of deep-water dredging in the Gulf of Mexico using the "Benthic Skimmer", and report on several geographic extensions, including two species not previously reported in the western Atlantic. *The Festivus* 39(2): 13-18.
- García, E. F. & Lee, H. G. 2002. Report on molluscan species found in the offshore waters of Louisiana, including many extensions of known range and unnamed species. *American Conchologist* 30(4): 10-13.
- García, E. F. & Lee, H. G. 2003. Report on molluscan species found in the offshore waters of Louisiana, including many extensions of known range and unnamed species II. *American Conchologist* 31(1): 26-29.
- Monsecour, K. & Monsecour, D. 2006. Two new *Cosmioconcha* (Gastropoda: Neogastropoda: Columbellidae) from the Caribbean. *Gloria Maris* 45(1-2): 7-13.